NATIONAL INSTITUTE OF GENETICS
YATA 1111, MISIMA, SIZUOKA-KEN,
JAPAN

July 10, 1962

Dr. J. Lederberg
Department of Genetics
School of Medicine
Stanford University
Palo Alto, Calif.
U. S. A.

Dear Josh,

Thank you very much many helpful informations in a series of your letters. During the early stage of flagellar regeneration from deflagellated cells of a phase-2 stable ($H_1^a Vh_2^- \underline{H}_2^{enx}$) strain, phase-1 (a-type) antigen could not be demonstrated by ordinary agglutination test. Insteads, I obtained some interesting (though still preliminary) results which might be useful to look into the mechanism of H_2-~~repression~~ epistasis and flagellar formation.
(1). When phase-2(1.2-type) flagellin prepared from $Ah_1^- H_1^i H_2^{1.2}$ is added to the regeneration medium for monophasic-1 ($H_1^i H_2^{1.2} Ah_2^-$) cells, the cells in early regeneration stage agglutinated by anti-1.2 serum as well as anti-i serum.
(2). Antiserum prepared against stable phase-2 ($H_1^a \underline{H}_2^{enx} Vh_2^-$) cells contains both anti-a and anti-enx antibobies; while that against stable phase-1 ($\underline{H}_1^a H_2^{enx} Vh_2^-$) cells contains enx-agglutinin but not a-agglutinin.
(3). Anti-$Ah_1^- H_1^i H_2^{1.2}$ cell serums so far have been tested contains anti-phase-2 antibody but lacks anti-i antibody.
(4). Antiserum prepared against TM2 cells deflagellated by phenol contains i- and 1.2-agglutinins.

Now I am inclined to think that,
(1). The site of flagellin synthesis and that of the flagellar formation might be different. The deflagellation effect of phenol is on the latter.
(2). In phase-2 cells of diphasic strains, both phase-1 and phase-2 flagellins are produced. At the flagellar forming site, phase-2 flagellin and phase-1 flagellin copete and the former represses the incorporation of the latter to flagella.
(3). Ah_1 (and Ah_2 also) regulates the activity of H_1 (and H_2 respectively). In Ah_1^- cells, H_1 is inactive and phase-1 flagellin is not synthesized.

I expect I will be able to obtain more results for or against these hypotheses before my departure for U. S. A., and to discuss with you on them based on the more materialized data.

This summer, Miss Mitani, a graduate student of Tokyo Metropolitan University, and Dr. Dhillon, an instructor of Hong Kong University and a friend of Dr. Ganassan, are visiting my laboratory. They will work with me here till the middle of the comming August. Mitani started the studies on the effect of antibiotics on the flagellation; Dr. Dhillon is interested in looking for the transduction between E. coli and Salmonella, and Hft of motility genes.

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The outline of my itinerary in U. S. A. is as follows:

August 18. Leave Tokyo for Montreal directly
18-29. in Montreal and Stowe
30-Sept. 9..Trip thru U. S. A. via. New York, Lafayett, Madison etc.
Sept. 10. Arrive Palo Alto
20. Leave SanFrancisco for Tokyo.

The probability that I will accomany my wife is now above 90%. I should be very happy if you would reserve a dormitory room for us ten days from Sept 10.

Best wishes to Esther(Hoshi-ko San),

Sincerely yours,

Tetsuo Iino